Date: _____

Kansas Department of Health and Environment
Application for a Brine Pond Associated with an Underground Storage Facility

Directions: Submit application to the Kansas Department of Health and Environment, Bureau of Water, Geology Section, Underground Storage Unit, 1000 SW Jackson St., Suite 420, Topeka, KS 66612-1367.

Regulatory reminders are marked with check boxes on each chart. Provide supporting data as appendices to this application.

Brine Pond Identification: **Facility Name:**				
☐ **Existing Pond**		☐ **New Pond**		
Date constructed: (existing brine pond)			Volume (bbls):	
Date of last liner inspection: (existing brine pond)			Surface area (acres):	
Location	**Township**	**Range**	**Section**	**Quarters**
County				
	Global Positioning System Location:			

Hydrogeological Investigation (New brine ponds)		
Site Characterization:		
Bottom of brine ponds:	**Static water level (separation distance between bottom of pond and water table must be at least 10 ft)**	**Surface area (measured at interior top of dike elevation) of pond**

Boreholes: a minimum of 2 boreholes for each 5 acres of surface and
A minimum of 2 boreholes if surface is less than 5 acres

Identification #:.	**Location (attach plat with locations)**	**Elevation**	**Depth**	**Groundwater level**	**Soil type**

Brine Pond Design (New brine ponds)	
☐ **Submit a design and construction plan (with maps and schematic of brine pond design)**	
Brine pond embankments and upper 6 inches of interior lagoon	
Compaction criteria	☐ **The maximum standard proctor density shall be a minimum of 95 percent at optimum moisture to optimum moisture plus 3 percent**
	☐ **The maximum thickness of the compacted material shall not exceed 6 inches.**
	☐ **The moisture content range of the compacted soils shall be optimum moisute to optimum moisture plus 3 percent.**
	☐ **The maximum size of dirt clods in the compacted soil shall be less than 1 inch in diameter.**
Gas Vapor Control System	**Date of installation:**
	Type of systems:

Brine Pond Liners: (Existing and New)			
☐ Single Liner ☐ Double Liner			
Liner Data			
Primary Liner	**Material**	**Thickness (mils)**	**Certification from liner manufacturer:** ☐ **Compatible with brine** ☐ **Ultraviolet resistant** ☐ **Rate of movement (volume/area/time)** **Estimated leakage _ _____** **Permeability _ _____** **Transmissivity _ _____**
Describe anchor method for primary liner;			
Describe seaming and installation process:			
Secondary liner:	**Material:**	**Thickness (mils)**	**Certification from liner manufacturer:** ☐ **Compatible with brine** ☐ **Ultraviolet resistant** ☐ **Rate of movement (volume/area/time)** **Estimated leakage _____** **Permeability _ _____** **Transmissivity _ _____**
Describe anchor method for secondary liner:			
Describe seaming and installation process:			

Describe expected defects for liner materials:
Certification for new liner for new or existing brine pond: ☐ **Liner will be installed in accordance with manufacturer's instructions** ☐ **Installation will be made by a contractor experienced in installation of impermeable synthetic membrane liners.** ☐ **Contractor will provide on-site supervision.**
Describe quality control provisions recommended by the liner manufacturer:

Seam Testing Methods	
Describe seam testing methods:	Destructive seam testing::
	Non-destructive seam testing:
Describe protocol for determining:	The number of tests per lineal foot of field seam:
	The size of destructive test specimens:

Leak Detection System (Existing and new brine ponds)	
Materials between liners:	☐ Capable of transmitting a minimum of 1/64 inch per acre per day of flow with a head of < 2 ft placed on the secondary liner.
	☐ Acceptable materials: clean sand, pea gravel, geotextile fabric, geo-net type material, alternates recommended by the manufacturer.
☐ **Maximum travel time for fluid penetrating the liner to reach the leak detection monitoring location is 24 hrs. or less.**	
Slope design	☐ Pond bottom with not less than 0.5 percent for the slope for the collection pipes.
	☐ **Not less than 1 percent for all other slopes.**
Dewatering system design	☐ Monitor the volume of fluid moved from the intermediate space between the primary and secondary liner.
	☐ Pump the volume of fluid generated equal to 10 times the maximum allowable liner leakage rate..
☐ **The volume of fluid monitored from the intermediate leak detection system is based on a rate of 10 percent of leak return system capacity and does not exceed 1,000 gallons per day per acre of pond area.**	

Groundwater Monitoring (Existing and New brine ponds)	
☐ **Submit groundwater monitoring plan for approval**	
Monitoring Wells	☐ Submit a map with well locations
	☐ Well spacing
	☐ Well depth and screen depth (screen interval that is inclusive of seasonal fluctuation of water table)
	☐ Sample log and dry sample set
Quality Assurance Plan for sample collection and analysis	☐ Monthly monitoring combustible gas
	☐ Quarterly chloride monitoring
	☐ Quarterly static water level measurements

Contingency Plan (Existing and New brine ponds)
☐ **Describe procedures for brine containment associated with pond maintenance and dewatering due to liner failure, repair, replacement, or expansion of the brine pond.**
☐ **Submit a schematic of the brine pond and the proposed containment system.**

Operation, maintenance, and repair history (Existing brine ponds)	
Date	**Description of repair or maintenance activity**

Financial Assurance (Existing and New Brine Ponds)	
☐ EXISTING-Submit proof of financial assurance within one year of April 1, 2003.	☐ NEW-Submit proof of financial assurance with the permit application
☐ Submit proof of financial assurance annually on or before January 31 of each year. EXISTING brine ponds will follow schedule for INITIAL submittal of financial assurance by April 1, 2004 and then continue with January schedule.	
☐ Comply with provisions of KDHE procedure #UICLPG-11 "Procedure for demonstrating financial assurance for a brine pond associated with a storage facility."	

Signatory Statement (Existing and New brine Ponds)
☐ **Sign and submit the signatory statement.**